

How a Pune Manufacturing Warehouse Reduced QC Rejection Using Real-Time Air Quality Monitoring



INTRODUCTION

Automech deployed multiple Custom-Configured Oizom Polludrone Air Quality Monitoring Stations across its fence-line manufacturing plant in Pune to bring continuous, real-time visibility to the air inside its warehouse.

Inside an industrial facility, air quality is inseparable from product quality: dust thrown off by machinery and the emissions of internal vehicle movement settle on materials and components, and in a precision manufacturing environment, that contamination carries a direct cost. The stations measure particulate matter, regulated gases, environmental conditions, and noise, streaming data in real time to the Envizom platform.



The deployment gave Automech's management an evidence base it never had; one that tied specific pollution patterns to specific corrective action on the warehouse floor.

03 Polludrone Stations
Deployed

10 Parameters
Per Station

24/7 Real-time Data
To Envizom

THE CHALLENGE

Continuous machinery operation and the movement of forklifts and transport vehicles generate a steady load of particulates and gaseous pollutants, and with little to no insights about where that load concentrates or when it peaks.

At Automech, the consequences were tangible. Suspended particulate matter was settling on products and materials, driving up QC rejection rates and forcing rework, wastage, and higher operating costs. With no monitoring infrastructure in place, the team could neither trace the pollution to its sources nor track how it moved through the day, leaving any attempt at control reactive at best.

Resolving this called for a system capable of the following:

- Continuous measurement of particulate and gaseous pollution at multiple points across the warehouse, rather than occasional spot checks.
- Visibility into how dust generated by machinery and emissions from internal vehicle movement accumulate indoors.
- Identification of the pollution hotspots responsible for product contamination.
- Reliable data to connect rising QC rejection directly to environmental conditions.
- A foundation of trend data to support proactive control where none had existed before.

WHY OIZOM POLLUDRONE

Monitoring inside a manufacturing facility imposes its own demands: several pollutant types tracked simultaneously, sensors that remain accurate in dusty industrial air, configurations suited to an enclosed warehouse, and data presented in a form that management can act on.

Oizom's Polludrone was selected because it meets each of these in a single unit.

- Multi-parameter sensing in one station, covering particulates, regulated gases, environmental conditions, and noise, without the complexity of separate instruments.
- Configurations tailored to the warehouse, with sensor selection matched to the specific contaminants of an industrial manufacturing setting.
- Industrial-grade accuracy, with high-precision sensors built to perform reliably in demanding indoor conditions.
- Real-time data through Envizom, giving the management team live readings, historical trends, and the insight to manage conditions proactively.
- A scalable architecture, ready to extend to additional zones or facilities as monitoring needs grow.

THE DEPLOYMENT

Three Custom-Configured Polludrone stations were installed at strategic points across the warehouse, positioned to capture how air quality varies between machinery, vehicle routes, and sensitive operational zones.

Each station continuously samples its surroundings and automatically transmits its readings to Oizom's AI-powered platform, Envizom, for real-time aggregation, visualization, and analysis.

This replaced a complete absence of monitoring with a unified, data-driven view of the warehouse

environment.

Each station monitors a range of pollutants and environmental parameters:

CATEGORY	PARAMETERS MEASURED
Particulate matter	PM ₁ (very fine), PM _{2.5} (fine respirable), PM ₁₀ (inhalable), and PM ₁₀₀
Gases	SO ₂ (sulfur dioxide), O ₃ (ozone), CO (carbon monoxide), NO ₂ (nitrogen dioxide)
Environmental	THP (temperature, humidity, pressure)
Acoustic	Noise levels



RESULTS

The monitoring system changed how Automech understood and managed its warehouse environment. With reliable, real-time data in hand, the management team could finally locate pollution hotspots and respond with targeted physical mitigation rather than relying on guesswork.

KEY OUTCOMES

Targeted Pollution Mitigation

- A ventilation system installed to improve airflow and lower pollutant concentration where it mattered most.
- Dust mitigation systems deployed to control particulate emissions at their machinery sources.

Improved Product Quality

- Cleaner indoor conditions reduced the contamination risks affecting product integrity.
- Greater consistency across manufacturing output.

Operational Efficiency

- Lower QC rejection rates and reduced material wastage.
- Reduced operational costs tied to rework and rejection.

Data-Driven Facility Management

- Reliable pollution data to inform long-term facility optimization.
- Stronger readiness for environmental compliance and audits, backed by continuous monitoring.

IMPACT

By implementing this monitoring solution, Automech moved beyond reactive problem-solving environmental management. The deployment gave the facility the visibility to identify pollution sources and act on them through ventilation, dust control, and air purification, yielding a cleaner warehouse, more consistent product quality, fewer QC rejections, and a more efficient manufacturing operation overall. Just as importantly, it established a continuous evidence base for the facility's long-term optimization and compliance.

Oizom specializes in real-time environmental monitoring solutions designed to help organizations measure, manage, and improve environmental performance. Our comprehensive portfolio includes air quality, weather, noise, and emission monitoring systems, powered by advanced sensor technology and cloud-based analytics. Trusted across industries, governments, and smart city initiatives, Oizom's solutions enable continuous monitoring, regulatory compliance, and actionable environmental intelligence.